

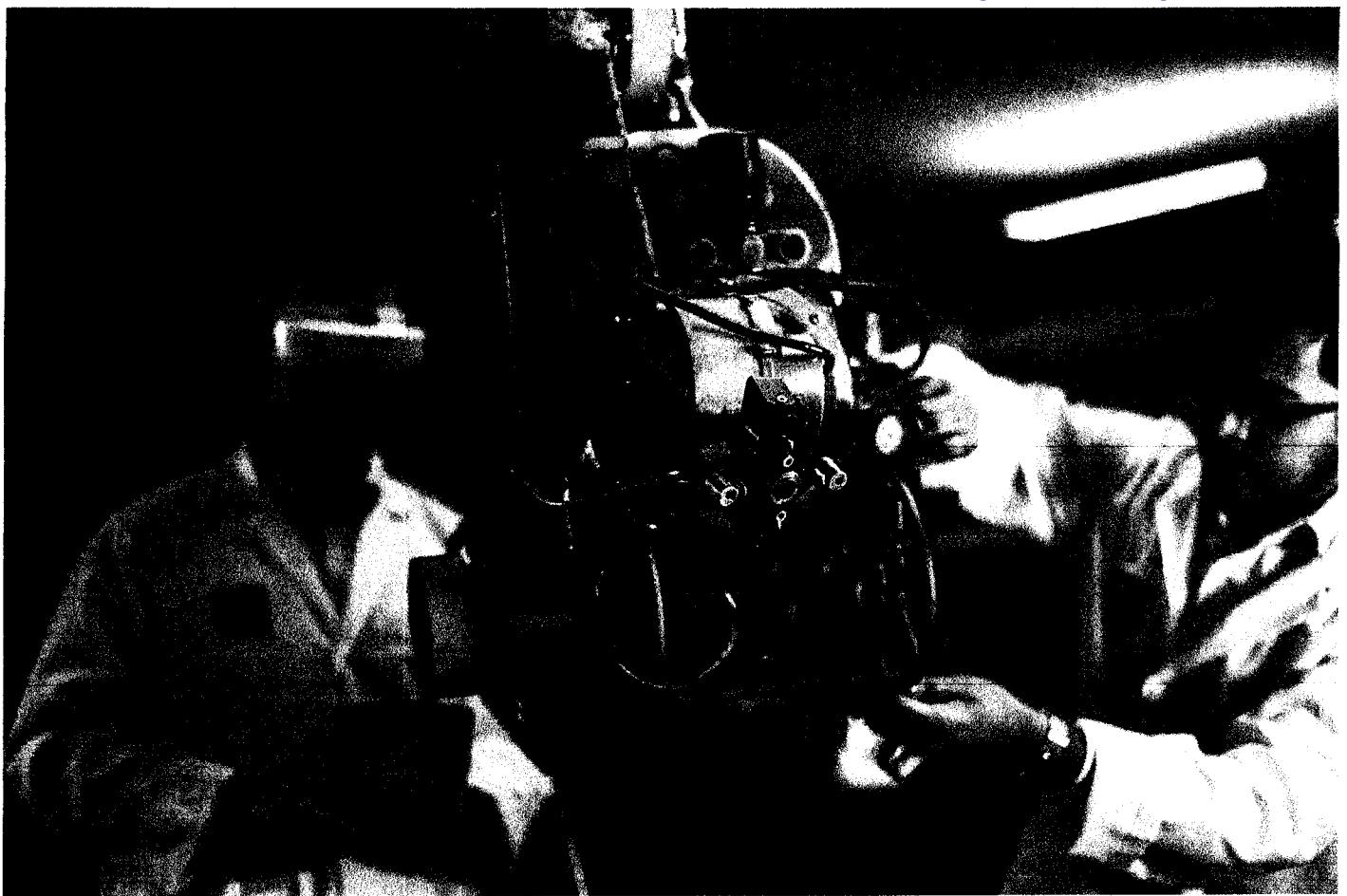
 Menu

Technology development

In-house developed technologies

We are engineering solutions in-house that continuously enhance our productivity and efficiency in producing and delivering products to our customers.

As a company of engineers, we're driven by the idea of overcoming the seemingly impossible. We're always looking for ways to increase the safety, efficiency, and environmental performance of our operations. From exploration to production, we regularly develop new and innovative in-house solutions to ensure we continue to reliably and sustainably meet the needs of our customers.



Shallow Water Inspection and Monitoring Robot (SWIM-R)

Shallow Water Inspection and Monitoring Robot

Designed, developed, and tested in less than two years, our Shallow Water Inspection and Monitoring Robot (SWIM-R) enhances pipeline inspection speed, efficiency, and safety.

The robot can be remotely operated to perform underwater inspection tasks in shallow water environments, which prove difficult for traditional diving support vessels. The SWIM-R robot can be deployed from shore or by using a low-cost inflatable vessel, reducing inspection time and costs, and can complete inspection tasks four times faster than divers.

Developed at our KAUST research center, the technology is protected by seven filed patents.

Saudi Aramco Inspection Robot

Our proprietary Saudi Aramco Inspection Robot (SAIR) is a magnetic robotic crawler capable of conducting visual inspection, ultrasonic thickness gauging, and gas sensing on hard-to-reach steel surfaces. It reduces potential hazards, inspection times, and costs associated with the erection of single spherical tank scaffolding used for inspection activities.

The SAIR is self-contained, wirelessly operated, and offers advanced levels of maneuverability and dexterity while moving on steel surfaces across a wide range of curvatures.



Saudi Aramco Inspection Robot (SAIR)



Robotic Dust Mitigation

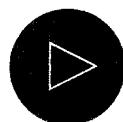
Robotic Dust Mitigation

Cleaning solar panels has long been a manual task but thanks to a new technology developed by our Research and Development Center in collaboration with King Abdullah University of Science and Technology (KAUST), a robotic solution cleans the panels and help avoid a significant reduction in efficiency of the energy collecting solar panels.

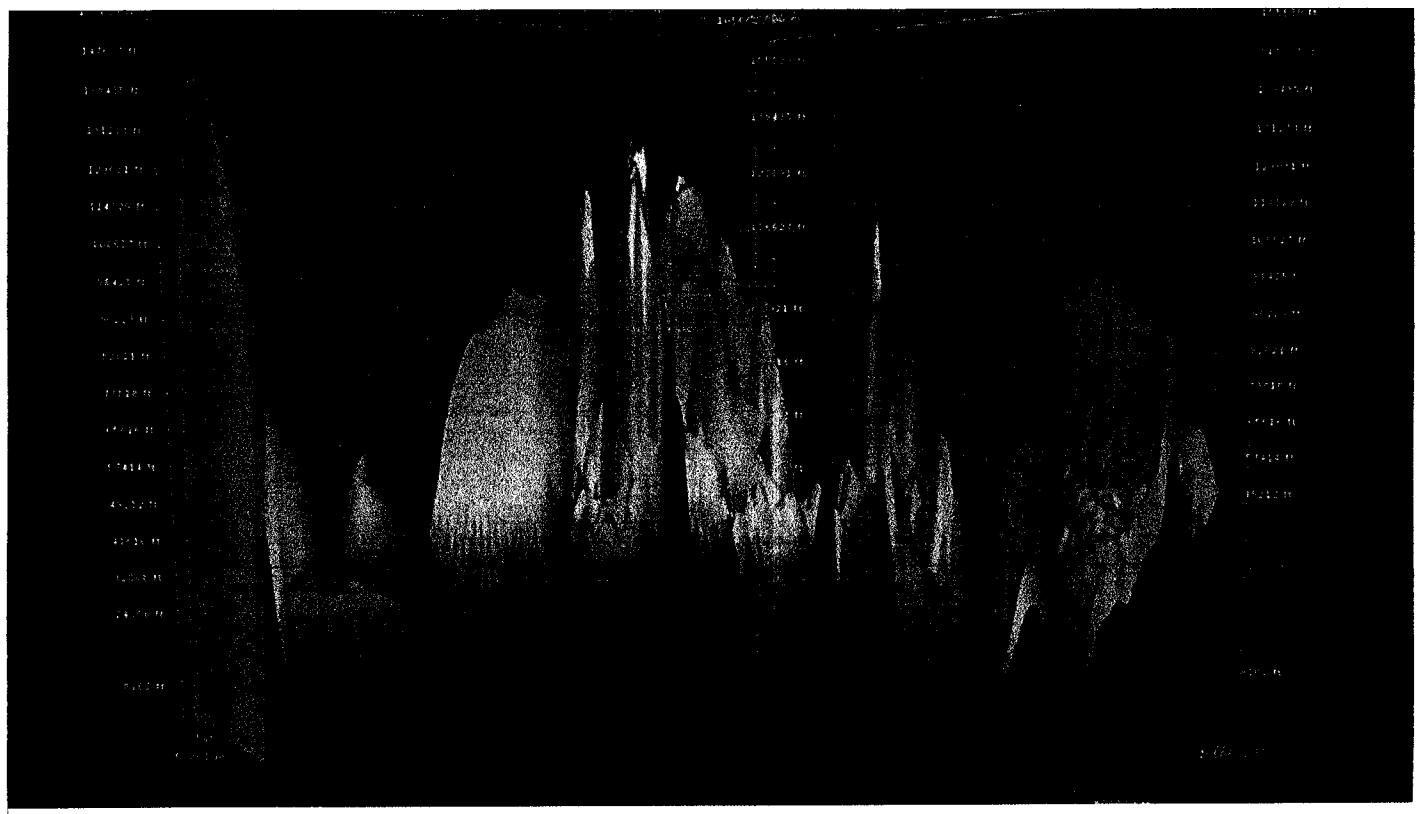
Dust accumulation on solar panels can have a seriously detrimental effect on the output of solar arrays. To maximize profitability and productivity, it is necessary to reduce accumulated dust and debris without causing damage to the panels, while also avoiding significant water wastage.

Our robotic, dry cleaning technology is fully automated to run on schedule or command. The technology is cost efficient while being highly durable, making it reliable even in dry, arid climates like those of Saudi Arabia.

The technology is now ready to help us realize the full profitability potential of automated dust cleaning technology for large-scale deployment of solar power in the region and beyond.



Meet RIC, the Robotic Inspection Crawler, developed at Aramco's Research and Development centre.



TeraPOWERS

Since Saudi Aramco's cornerstone reservoir modeling technology - POWERS - was first deployed in 2000, it has taken evolutionary steps from mega-cell to giga-cell and now to industry-first tera-cell simulation capability. With the world's first trillion-cell run, TeraPOWERS is a major breakthrough for the company and the global scientific community. Achieved in collaboration with the King Abdullah University of Science and Technology, TeraPOWERS will be able to simulate oil migration problems in the Kingdom in a fraction of the time it once took.

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In-house developed technology

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